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October 15, 2007

AGENDA ITEM 7b

TO: MEMBERS OF THE INVESTMENT COMMITTEE

I. SUBJECT: Global Equity Domestic/International Allocation, REIT Exposure, Small & Mid-Cap Exposure, and Benchmark

II. PROGRAM: Global Equity

III. RECOMMENDATION: Information

IV. ANALYSIS:

Summary

In conjunction with the upcoming asset allocation workshop and Global Equity strategic review, the CalPERS CIO requested that staff undertake a review of CalPERS' Global Equity benchmark. The review concentrated on three aspects of the benchmark:

- Domestic versus international market weightings
- Removal of REIT (real estate investment trust) securities from the domestic component
- Entities providing data and benchmark information for the domestic and international components

As a result of this review, staff believes four changes would better align the CalPERS benchmark with common practice in global equity investing:

- Utilize a market capitalization weighted structure for the entire Global Equity program. This change would allow the domestic, developed market international and emerging market component weightings to vary over time and be combined into a single Global Equity benchmark

- Extend the market capitalization coverage to include small and micro-cap exposure to provide CalPERS with almost total market inclusion
- Remove the prohibition on holding REIT securities in the domestic component
- Retain Dow Jones / Wilshire and FTSE as the data providers for the domestic and international components respectively, but utilize a normalization process to combine the two data sources into a single customized CalPERS benchmark

Commentary supporting these concepts is reflected in a Wilshire Associates opinion letter (Attachment 1) and in a document prepared by the CalPERS Risk Group (Attachment 2).

Market Weighting

Public equity makes up approximately 60% of the total CalPERS investment portfolio. Historically, CalPERS has fixed the weights of the domestic and international components of the global equity program. Staff has built the investment program to maintain these fixed weights with some tolerance for valuation drift and to recognize the outcomes from the monthly asset allocation meetings.

Currently, Global Equity's policy allocation to the domestic equity market is twice the allocation to international equity. This structure does not accurately reflect the true nature of the investable universe as reflected in the market capitalization weighting of equity, based on MSCI or FTSE global investable universes. In fact, such a policy weighting has significantly under-allocated to international equity markets as shown in Table 1 below. The Proposed Weight column reflects current global market capitalization proportions, which vary significantly from CalPERS' current strategic position.

Table 1 **Market Segment Weights**

Region	CalPERS Strategic Weight	Proposed Weight	Difference
U.S.	67%	44%	-23%
Developed International	28%	46%	+18%
Emerging International	5%	10%	+5%
Total	100%	100%	0%

Asset allocation provides a framework, which supports or constrains optimal investing at the highest level by guiding capital distribution. Additional attributes related to asset allocation are risk budgeting and performance measurement. Over the time period considered in this review, the international equity markets have generated more return than domestic equity as can be seen in Table 2 below. While this return pattern may not be repeated, the increasingly global nature of the capital markets is causing more institutions to adopt a global capitalization weighting.

Table 2 **Performance Variation**

Performance	CalPERS Strategic Weight	Proposed Weight	Difference
One year	18.16%	20.45%	2.29%
Three years	63.80%	77.97%	14.17%
Five years	117.77%	142.10%	24.33%
Five Year Risk	**12.40%**	**12.59%**	0.19%

The bottom row of the performance table above shows the incremental risk attached to the proposed weighting mechanism. An increase in total risk of 19 basis points is very small. This increase is attributable to the larger emerging market weighting. Absent the increased weighting to emerging markets, the total 5 year risk level of the proposed structure would decline to 11.72%.

Changes to investment allocations of the magnitude suggested in the proposed weight structure would entail significant trading costs, shown below in Table 3. Reflected as a proportion of total Global Equity assets, these trading expenses, estimated at $332 million, would represent approximately 22 basis points. The calculation of this estimate assumes the migration is staged in $2 billion slices.

The trading expenses associated with this structural shift have the potential to impact the investment results for Global Equity, CalPERS overall, and therefore the staff incentive plan. Mitigating these expenses will require a transition plan implemented in a gradual, opportunistic fashion that should incorporate changes from other parts of the investment program and address the affect on the incentive plan. A full year would be an appropriate time frame to complete the transition.

Table 3 Transition Expense Estimate

Transition	U.S.	Developed International	Emerging International
Capital	$(37 B)	$29 B	$8 B
Trading costs	$130 mm	$108 mm	$94 mm

Capitalization Extension

Historically, CalPERS has limited the coverage of the various equity benchmarks to the large and mid-cap ranges of the capitalization. This was done due to the belief that transacting in small and micro-cap securities was very problematic and expensive. While these securities have somewhat higher trading costs, the advent of "float" adjusted benchmarks has made their inclusion much less problematic. Float adjustment provides for individual security market capitalizations that reflect the actual proportion of company ownership that trades in the market.

Extending CalPERS' global equity benchmark into smaller and micro-cap security exposure would entail a shift of less than 2% of the public equity portfolio. Adding this exposure would give CalPERS almost complete coverage of the investment opportunity set contained in the public equity markets. The trading expense of this addition is included in the estimates contained in Table 3 above and, due to the small incremental exposure needed, does not significantly alter the cost estimates.

Removing the REIT Prohibition

Currently, CalPERS' posture on REITs differs between the domestic and international segments of the global equity portfolio. REITs are excluded from domestic benchmarks and portfolios but are included in international benchmarks and portfolios. This policy dates to the 1990's when the Real Estate group did little overseas investing and there were few REIT securities outside the U.S. The impact of the REIT prohibition for domestic portfolios is relatively small and the constraint is viewed by both Real Estate and Global Equity staff as unnecessary. In addition, this prohibition has been a source of concern among CalPERS' external domestic equity managers since it removes a discrete opportunity set that may reduce their ability to generate value added returns. Table 4 below reflects the REIT weighting within the various market segments.

Table 4 **Market Segment REIT Weights**

	U.S.	Developed International	Emerging International
REIT Weight	1.94%	1.31%	.027%

Benchmark Data Providers

Staff has gathered and analyzed detailed and comprehensive information from various benchmark providers that offer global solutions. All relevant factors were examined, particularly in terms of supporting CalPERS' specific investment objectives. For evaluation and scoring, these factors were grouped into these five broad areas:

- General market acceptance which evaluates the degree of adoption, availability of quantitative research, derivative products, securities lending opportunities, and support of capital deployment.
- Reconstitution methodology which incorporates a balance between turnover, the timing of activity between different benchmark segments and the possible effect of speculative trading.
- Theoretical robustness and consideration of concentration, depth of coverage, liquidity screens, actual investability, and unambiguous rules based construction.
- Operational considerations including accuracy, effectiveness of data transmission, and predictability of corporate action treatment.
- Qualitative factors which consider overall cost, quality and timeliness of data delivery, as well as customer service.

The review of the data and benchmark alternatives revealed several additional topics that impacted the final staff position. Among these are the convergence of benchmark construction methodology across the providers and the resultant high correlation between the offerings; the degree of speculative trading impacting benchmark reconstitutions; a significant variation in the perceived attractiveness of the various providers' U.S. offerings versus their international benchmarks; the degree of customization required by CalPERS specific factors; and, the need for a normalization process to avoid excessive turnover during reconstitution activity.

Benchmark providers have been evolving their construction methods to the point where there is now a high degree of similarity between them. For example, the market coverage is very similar, they all incorporate a "free float" adjustment to each company's market capitalization, and planned methodology changes are

likely to continue this convergence. The return correlations between prominent benchmarks are reflected in Table 5 below. As evidenced by the correlations, these benchmarks are very close substitutes.

Table 5 Market Segment Correlations

Market Correlation	3 Years	5 Years	10 Years
International x U.S FTSE All World vs. MSCI ACWI	99.98%	99.95%	99.56%
U.S. Wilshire 5000 vs. Russell 3000	99.93%	99.95%	99.79%

Speculative trading during benchmark reconstitutions is particularly problematic with the offerings from some benchmark providers. CalPERS' staff have been able to generate some value added performance by having benchmarks that are not subject to as much speculative activity. We believe there is continuing efficacy in retaining this characteristic.

Examination of the U.S. component of the various global benchmarks, lead to the conclusion that stand alone U.S. benchmarks retained some superior attributes. It is believed that having almost total coverage of the various market components (at least in the U.S. and developed international) was desirable and data supporting this degree of coverage should be available.

The need for CalPERS specific customization was also recognized. This customization need stems from issues such as the exclusion of tobacco related firms or other divestment related constraints.

Staff believes there is a need for a "normalization" process to be applied to CalPERS' benchmark data. This process would entail synchronizing the timing of all index reconstitution activity. The benefit of this type of synchronization is the elimination of any redundant trading activity which could be caused if the various segments were reconstituted at discrete time points. Consistent timing applied to all corporate action events also aids in the elimination of any redundant trade activity.

Staff, as a result of all the above considerations, believe that CalPERS should retain Dow Jones / Wilshire and FTSE as the benchmark information providers for the domestic and international components respectively. Wilshire Associates will provide for the normalization of the benchmark data into a single consistent structure.

It is anticipated that the changes referred to in this information item shall be brought back to the Investment Committee as an action item during the December Investment Committee meeting. Approval of these changes would require some modification to the investment policy document guiding the internal management of CalPERS' domestic and international index portfolios.

V. STRATEGIC PLANS:

This item supports Goal VIII to manage the risk and volatility of assets and liabilities to ensure sufficient funds are available, first, to pay benefits and second, to minimize and stabilize contributions.

VI. RESULTS/COSTS:

This item is intended to migrate CalPERS' Global Equity strategic benchmark to a structure that is better aligned with current institutional investment practice. The cost attached to this item would be the potential rebalance transaction expense as noted in Table 3.

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September 27, 2007

Dr. Russell Read
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Re: Global Equity Benchmarks (Agenda Item 7b)

Dear Russell,

You requested Wilshire's opinion regarding Staff's proposal regarding the new/revised benchmarks for the Global Equity program. We agree with the recommendations presented by Staff.

Market Weighting

Staff has proposed shifting the target Global Equity benchmark from the current 66.7% US / 33.3% non-US split to a global market weighting, which is currently approximately 45% US / 55% non-US. Over the last several years, Wilshire's own internal research has shown a declining value from a "Home Country Bias" in clients' asset allocations, as the usual over-weight to domestic equities produces no additional return but may increase overall plan risk due to the concentration within a single asset class. As a result, many recent asset allocation studies performed for clients have pressed for a shift toward a country-neutral portfolio, weighted solely by market capitalization or GDP.

During this same time period, with the rapid increase in corporate globalization, such a shift toward a geography-neutral structure has recognized that national boundaries and corporate headquarters have become essentially meaningless from competitive and operational standpoints. The vast majority of the largest 1,000 companies in the world have a large share (or, in many cases, the majority) of their sales, manufacturing, operations, and/or personnel outside of their nominal country of domicile. As a result, to say that a Japanese auto manufacturer that builds more cars inside the US than anywhere else in the world is a purely Japanese investment, and therefore underweight this company relative to its true weight in the global economy (along with all other "non-US" companies), is potentially a misnomer, especially if we are simultaneously overweighting a US auto manufacturer on the basis of its US headquarters, even though much of its manufacturing is conducted in Canada, South Korea, and Mexico. Altering the structure of the portfolio to ignore what are increasingly artificial distinctions, as proposed by

Staff, will allow the portfolio to more fairly reflect the true global opportunity set of investments.

In addition, given that developed non-US markets and especially Emerging Markets are generally considered to be more inefficient than the US markets, the resulting increased weight to non-US stocks should offer more opportunities for value-added by active management than are currently possible in the portfolio.

Capitalization Extension

Wilshire has always contended that the broadest measure of a market is the best measure of a market. Hence our endorsement over the years of the Lehman Aggregate Bond Index for use by most clients and our creation of the original Wilshire 5000 Index, now known as the Dow Jones Wilshire 5000 Index – the only stock market index to include every single publicly traded security in an equity market. Although we recognize that an extension into small and micro cap stocks should be made slowly, to minimize market impact and transactions costs, we fully support the idea of CalPERS expanding the opportunity set of available securities whenever possible.

Removing the REIT Prohibition

REITs comprise a fairly small portion of the overall equity market capitalization, but can be a meaningful source of value-added. Since the Real Estate team invests only 10% of its assets in REITs, CalPERS has a built-in bias against REITs at the level of the entire portfolio. As a result, we believe that Staff's request to add REITs back in to the benchmarks has merit and should be approved.

Benchmark Data Providers

CalPERS has used FTSE and Wilshire (now Dow Jones Wilshire) indexes as the broad international and domestic equity benchmarks for the international and domestic equity portfolios, respectively, for many years. Both providers are recognized as providing well-constructed benchmarks that are broadly representative of equity markets. In addition, both have demonstrated the ability to successfully customize the benchmarks to meet CalPERS specific needs (i.e. tobacco-free). Please note that Wilshire Associates no longer builds indexes. Dow Jones licenses Wilshire's name, and therefore Wilshire has no direct financial incentive to recommend the Dow Jones Wilshire indexes for use by CalPERS or any other client. In addition, Wilshire has already discussed the concept of the "normalization" process and we will work closely with Staff to develop a normalized global benchmark that fits CalPERS needs. The conversion of the existing benchmarks to the "Custom CalPERS" versions (i.e., excluding tobacco and REITs) is already included in Wilshire's current contract, as would be the "normalization" process.

We look forward to working with you over the next few months in developing the policy and operational/investment structure for this new asset class, as well as in the asset allocation process.

If you have any additional questions, please do not hesitate to contact me.

Sincerely,

The Merits of a Global Equity Asset Class

Risk Management / Asset Allocation
July 20, 2007

Objectives

Russell asked the Risk unit to assess the merits of adopting a global equity asset class and address implementation issues.

Recommendations

The Risk unit recommends that:

1) CalPERS adopt a global equity asset class;
2) We defer to the Equities unit on a preferred global equity benchmark.
    - Leading global equity indices are compared in Appendix A
    - Each index assigns market-cap weights to all countries.

Reasons for global equity asset class

- The same reasons for a policy allocation to international equities also support a global equity benchmark weighted by market caps.
    - Improved diversification
    - Improved opportunity set

- Permits global manager assignments, resulting in:
    - More efficient passive portfolios; and
    - Active portfolios with greater expected outperformance:
        - managers able to take positions on U.S. vs. other countries; and
        - greater returns within sectors because of greater opportunity set.

- Recognizes that prior reasons for home country bias are diminishing
    - Globalization, increasing cross-country trade and capital flows, makes country of domicile or equity exchange less relevant
    - Convergence of accounting and reporting standards
    - Reduced costs of investing internationally

- The opportunity costs of not adopting a global equity asset class are rising with continued globalization, and declining U.S. share of global equity market cap.

Reasons for including emerging market countries at benchmark index market cap weights

- Emerging market (EM) equities have similar risk-adjusted returns
    - Investors are unlikely to systematically undervalue EM equities
    - EM equity valuations were about 50% of the U.S. in 2002, but have since nearly reached parity

  - Historical patterns of long-run mean reversion is unfavorable for EM equities
- The Equities unit and its managers (versus the Board) are best suited to make market cap relative EM equity bets.
- Larger than market-cap allocations to emerging market equities does not reduce portfolio volatility.

Reasons for historical home country bias

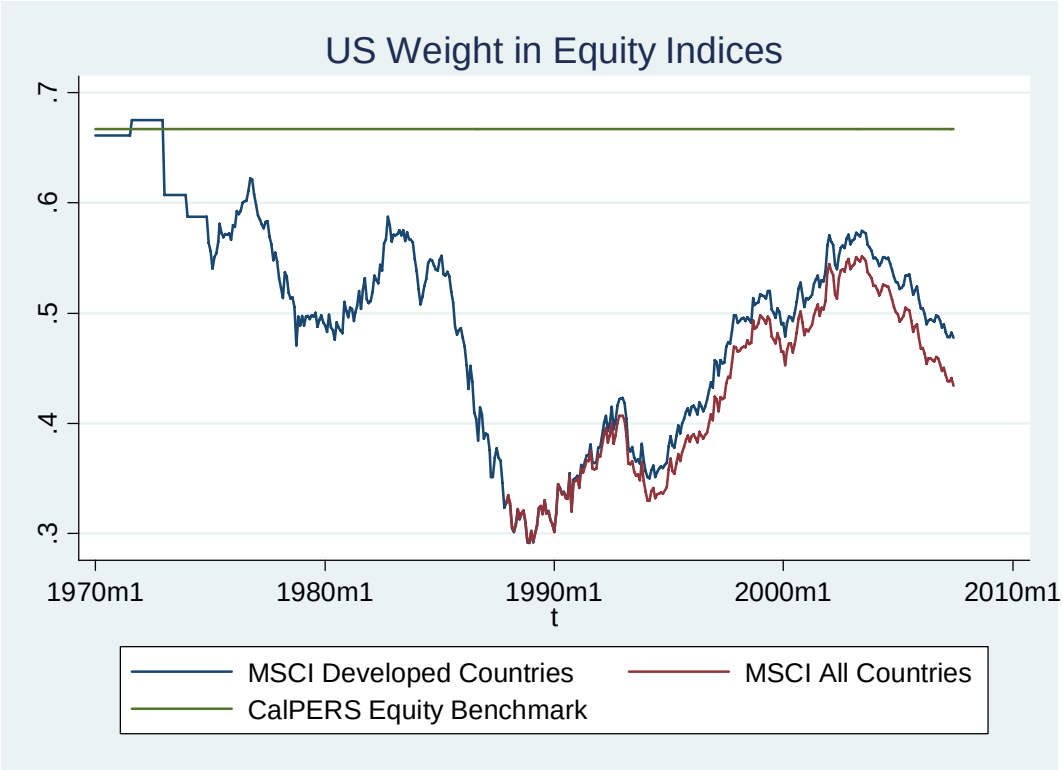
CalPERS has two publicly traded equity asset classes, U.S. and international. The separation has enabled CalPERS to assign a U.S. equity benchmark weight excedding the U.S. market cap share of a global equity index. This home-country bias can be explained by several reasons:

- CalPERS liabilities are in U.S. dollars to U.S. retirees, so domestic assets better match liabilities.
- A view that U.S. domiciled companies trading on U.S. exchanges are less risky because of more effective regulation, more honest accounting and transparent reporting, and less political risk.
- It costs less to invest in domestic equities because of smaller research, trading, custodial, oversight, and other costs.
- Smaller cap stocks may be more fully represented with separate U.S. vs. international equity asset classes and benchmarks.
- Most investors have a home country bias, so investing similar to others results in less litigation risk.
- The Board prefers to decide on the US-international equity benchmark split, rather than allow it to be determined by relative market caps.

In this paper, we find that these historical reasons for a home country bias are less valid today and are more than offset by the advantages of a global equity asset class benchmarked to a market cap weighted index.

Historical U.S. Equity Allocations

CalPERS Fund benchmark (policy) allocations include 40% U.S. equity and 20% international equity, so U.S. equities represent 2/3 of the policy weighting of publicly traded equities. In comparison, the U.S. share of global equity market cap has ranged from 30% to nearly 70%. The U.S. equity market cap share of all countries including emerging markets has averaged 42.6% since 1988 and ended June 2007 at 43.4%, substantially below the 67% U.S. equity CalPERS policy target.



The U.S. share of global equities will likely decline as the ratio of equity market cap to GDP becomes more similar across countries. The U.S. represents about 43% of the global equity markets but only about 30% of global GDP. A convergence would reduce the U.S. equities share to 30%, while slower U.S. GDP growth would cause the U.S. equities share to decline below 30%.

A declining U.S. equity market cap weight means a rising gap between the U.S. equity market cap weight versus the CalPERS 67% equity allocation to U.S. equities. A larger gap in turn implies a greater bullish (implicitly active) bet on U.S. equities, and greater potential opportunity cost at risk.

REASONS FOR RECOMMENDATION 1. GLOBAL EQUITY ASSET CLASS

A) More Efficient Portfolio

Per CAPM, an efficient portfolio is market-cap weighted, implying that a global equity asset class with benchmark weights has the lowest expected volatility for a given expected return. This conclusion presumes that the equities of any country are neither systematically under or overvalued.

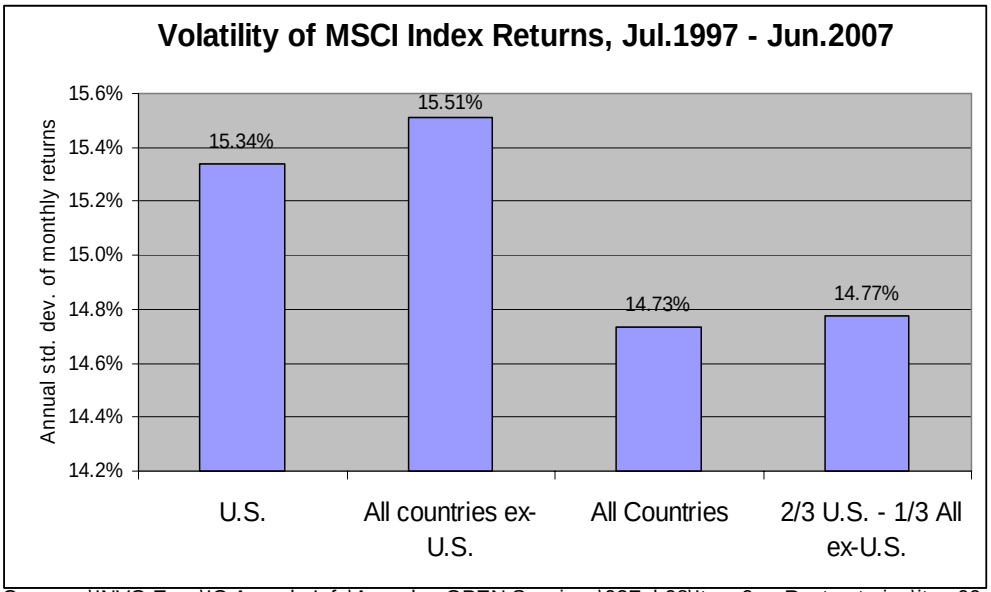
Criticism of the CAPM has been in vogue recently because of findings that not all CAPM assumptions hold and that certain portfolios with non-market cap weights have outperformed market cap weighted portfolios over certain periods. Well even if all CAPM conditions do not all hold or even if we jettison CAPM entirely, a cap-weighted index is still the most diversified index because it replicates the investment opportunity set and thus is the neutral starting point.

To adopt a non-market-cap weighted benchmark implies a view that weaknesses of cap weighting outweigh the diversification advantages. Specifically, a home country bias foregoes the diversification benefits of cap weighting in order to reflect a view that foreign securities are either riskier or have lower expected returns versus domestic securities.

That is, a global cap-weighted benchmark is the most diversified, and reasons are needed to justify an alternative, such as a 2/3 U.S. equity policy weight.

Over the most recent ten years, July 1997 to June 2007, the:

- The inclusion of international equities substantially reduces the volatility of equity returns.
- However a shift from a 2/3 U.S. equity benchmark to a market cap weighted benchmark would not have further materially reduced portfolio volatility, as the risk reduction from the improved diversification was offset by the greater volatility of the international equity returns.



The finding that equity portfolios with 2/3 U.S. weight vs. market cap weights had similar historical volatility does not diminish the greater diversification of a cap-weighted index. During the 1970s, 1980s, and 2000s, the volatility of an equity portfolio would have been minimized with an approximate weight of 50% U.S. equities and 50% international equities, allocations more similar to market cap weighting than the CalPERS policy 2/3 U.S. weight. An overweight to U.S. equities resulted in less volatile returns only during the 1990s (Wilshire, July 2006).

Further, unless the US is singularly insulated from financial storms, an equity portfolio concentrated in a single country is more exposed to potential extreme losses.

B) A Global Equity Asset Class Permits Global Equity Mandates

With separate US equity and international equity asset classes, manager assignments are either domestic or international, because it is difficult to measure or attribute performance of a single global equity mandate across the two asset classes. This back-office difficulty explains the lack of global equity mandates, regardless of their investment merits.

Combining US and international equities into a single global equity asset class eliminates the need to apportion the return of a global equity portfolio across the two asset classes, and thus permits global equity assignments.

Indexed equity portfolios are more efficiently managed with global mandates. Passive equity assignments generally rely on sampling, holding a subset of benchmark holdings in order to reduce transaction costs while still achieving benchmark-like returns.

Sampling is more efficient when a single portfolio is managed against a single global universe of securities versus managing two portfolios, each against a subset of a global set of securities.

Sampling relies on obtaining representative portfolio exposure across region, sector, and other risk factors. With a global mandate, a passive manager can obtain adequate representation by risk factor with greater flexibility and fewer securities versus separate domestic and international mandates. Consequently, for a global benchmark, any target tracking error can be achieved with smaller transaction costs.

Further, more firms are acquiring foreign companies. With distinct U.S. vs. international equity asset classes, the combining of a U.S. and international company results in benchmark changes and portfolio trading and thus is unnecessarily disruptive and costly to investors. In comparison, a market-cap-weighted global equity benchmark is essentially unaffected by a cross-border merger or acquisition.

Active equity strategies achieve greater outperformance with global mandates. Global mandates are advantaged by the manager's ability to assign benchmark-relative weights to the U.S. versus other countries.

More importantly, a global mandate should also result in greater outperformance within sectors because of the greater number and diversity of companies within sectors. For instance, a manager of a US-only assignment may be bullish on international auto company equities, but not be allowed to buy any. Or the manager may hold U.S. auto stocks primarily for risk-control purposes, at the cost of diminished expected returns.

Certain industries, such as household durables and food products, are dominated by overseas companies, leaving the U.S. equity manager with fewer competitive companies to select from. Conversely US dominance in IT industries may leave slim pickings in large cap tech for international-only mandates. The limited opportunity set of a country or regional assignment limits flexibility, generally resulting in decreased expected returns. Because of globalization, the effect of sector selection on portfolio returns has grown at the expense of country selection (Wilshire, July 2006).

As predicted conceptually, global equity managers have outperformed, at least since 2000.

> "Average global equity managers in Mellon Analytic Solutions representative universes have outperformed the combined average U.S. and non-U.S. approach over the past seven years, but the evidence of outperformance is weaker over the longer term." (Frank Russell, June 2007, p.1)

The outperformance of the global assignments has been driven by the advantages of greater opportunity set of securities and by the ability to allocate between U.S. and other equities.

> " . . . large bet global equity managers outperformed small-bet global equity managers by 180 basis points from 1990 to 2006. The large bet managers had an information ratio of 0.45, compared to 0.20 for the small-bet managers." (Frank Russell, June 2007, p.3)

With a global equity asset class, CalPERS staff would retain discretion to assign country or regional mandates. For instance, global mandates could be assigned only to managers with perceived competence in global management, while regional or country assignments could continue to be assigned to other managers.

Finally, many managers are experienced with active global equity mandates, so implementation is feasible.

C) Prior Reasons for Separate Domestic versus International Equity Asset Classes are Becoming Less Valid

The additional costs of investing internationally are declining. The incremental costs of investing abroad have declined with advances in information technology. IT advances such as the internet, broadband connections, and teleconferencing have reduced the costs and improved the quality of transmitting information. For example, the cost in 2005 dollars of a 3 minute New-York/London telephone call has declined from $80 in 1950 to $0.23 in 2007. The costs of processing information have also declined at an amazing pace. For instance, the cost of performing calculations has declined a billion-fold since WWII (OECD, May 2005, p.3).

IT investment applications such as enhanced financial databases and global electronic trading systems have improved managers' ability to invest globally at low cost.

Accounting and reporting standards are converging. A traditional view, at least until U.S. accounting scandals during 2001-03, has been that U.S. accounting and reporting standards are superior to those in other countries. However, any superiority, if it ever reflected a reality more than a complex, has become less applicable with the evolution toward global accounting standards. [See IASB]

Globalization makes country of domicile or exchange less relevant.

Globalization continues

More companies are evolving into global enterprises by sourcing, producing, and selling across multiple countries. As evidence, the value of imported inputs relative to the value of production has risen from 10% in the 1970s to approximately 30% today, while trading as a percentage of world GDP has risen nearly as much, from 13% in 1970 to 27% in 2004 (OECD, June 2005, p.4).

Capital markets are also becoming more globally integrated. Cross-border capital flows have tripled over the last decade (OECD, June 2005, p.4), so companies are less constrained by local capital markets.

Globalization has been driven by declining trade tariffs,[1] declining costs of global expansion, and continued gains from specialization.

Implications

With advancing globalization, the domicile of a company or the country of its primary equity exchange is becoming less relevant. Classifying the shares of a global company to a single country per the location of its headquarters or per the primary exchange of its equity shares is becoming ever less congruent with the nature of its business activities.

[1] Median tariffs have declined from 29% in 1985 to 13% in 2004 in Non-OECD countries and from 7% to 2% in OECD countries over the same period (OECD, June 2005, p.3).

Diversification versus matching assets and liabilities. The liability argument is that since CalPERS liabilities are to U.S. retirees, assets invested in U.S. securities results in a better match between assets and liabilities.

The response to this argument is three-fold. First, as explained above, many "U.S." and "foreign" companies are more accurately described as global companies, so for these companies the distinction between U.S. and international is not meaningful.

Second, the argument in support of liability matching, even if true, is outweighed by the diversification benefits of a global mandate. The matching of liabilities is only one criterion guiding CalPERS investment policy. For instance, CalPERS liabilities are bond-like, but not all CalPERS investments are in bonds because of return and diversification reasons. Similarly, CalPERS checks to retirees are in U.S. dollars, but CalPERS assets are not 100% exposed to the U.S. dollar for diversification reasons.

Third, holding only U.S. assets would result in "wrong-way" exposure. CalPERS contributions are paid by California taxpayers, whose ability to pay taxes depends on the growth of the California economy. While there is little empirical relation between equity returns and GDP growth over short periods, an unexpected recession in California and the US would likely result in US equities underperforming international equities, resulting in the need for greater taxes to fund greater contributions, just when recession-strapped Californians would find it most difficult to pay the incremental taxes. In such an adverse scenario, international holdings would reduce the need for incremental tax burdens.

Litigation risk. Litigation risk arises from having an investment policy different from most similarly situated investors and a creative lawyer observing a period when the "maverick" policy underperforms. However U.S. institutional investors have been adopting more balanced equity portfolios (Shoenfeld, 2007, p.30), so the maverick/litigation risk of adopting a global equity asset class should be declining.

Board Preferences. While the Board may prefer to select domestic versus international equity benchmark allocations, this analysis suggests that the opportunity costs of doing so are substantial.

REASONS FOR RECOMMENDATION 2. ASSET CLASS BENCHMARK

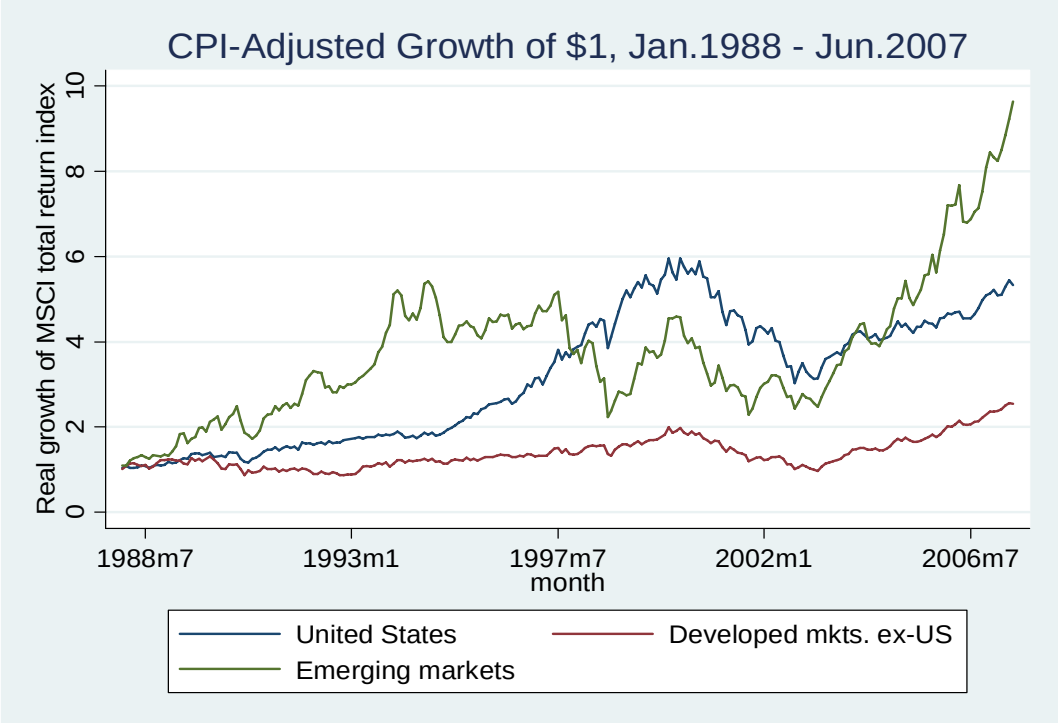
Reasons for not assigning larger than market cap weights to emerging markets

The neutral emerging market equity allocation is its market cap weight. A benchmark overweight (weighting greater than market cap weighting) would presume that emerging markets will either outperform or confer some diversification advantage.

A forecast that emerging market equities will outperform other equities long-term presumes that investors will systematically undervalue emerging market equities.[2] This is unlikely given investors' relentless pursuit of higher returns and the ample mobility of global capital.

For instance, international equities outperformed in the 1980s while U.S. equities outperformed in the 1990s. Neither case implied that the outperforming region was predestined to continue to outperform, only that investors had misforecast returns by region. Otherwise equity investors would have invested more in Japan in 1980 and more in the U.S. in 1990, in each case pressuring prices up such that subsequent returns were similar across countries.

By analogy, the outperformance of emerging market equities in the 2000s simply means that investors had undervalued and underinvested in emerging markets earlier in this decade, not that emerging markets will continue to outperform.



[2] For a well-diversified investor such as CalPERS with a small allocation to emerging market equities, there is little meaningful difference between absolute versus risk-adjusted emerging market returns.

Further, from a tactical perspective, emerging market equity valuations were about ½ those of U.S. equities in 2001, but valuations have since converged (Capital Guardian quarterly reports). Thus a primary catalyst for the tremendous outperformance of emerging market equities is no longer present.

Finally, since 1970 the performance difference between U.S. and other developed market equities has exhibited positive momentum over one-month and one-year intervals, but mean reversion over three- and five-year periods. Though the small correlations indicate that momentum and reversion are weak signals, this record suggests that the streak of emerging market outperformance is long in the tooth.

Correlations: U.S. equity relative returns, prior versus future, 1970-2007

		Future U.S. relative returns			
		1 month	1 year	3 year	5 year
Past U.S. relative returns	1 month	-0.06	0.11*	0.04	-0.03
	1 year	0.11*	0.31*	0.10*	-0.11*
	3 year	0.07	0.12*	-0.14*	-0.17*
	5 year	-0.01	-0.06	-0.14*	-0.11

* = correlation is significant at 5%.
U.S. relative return = MSCI U.S. equity return minus MSCI ACWI xUS Equity return.

Board versus Staff/manager decision

Further, the key issue is not whether emerging markets will continue to outperform long-term, the issue is who should make the call. To overweight emerging markets benchmark weights (assign benchmark weights above index market cap weights) is to make an active bet bullish on emerging market equities.

From a Fund governance perspective, the Equities unit and its managers should make the bet on the emerging market portfolio weight relative to the market cap weighted index, rather than have it be set via a non cap weighted benchmark. The Equities unit and their managers are better suited to make this judgment, because they have more knowledge of market conditions, and the flexibility needed to go overweight or underweight emerging market equities in different periods as perceived opportunities evolve. In comparison a benchmark overweight to emerging markets would be difficult to change once in place.

Diversification effects

Regarding diversification, backtests suggest that greater than benchmark allocations to emerging markets would not have resulted in less volatility portfolio returns. The greater volatility of emerging market equities has generally offset any diversification advantages.

Appendix A

Global Equity Indices
30 March 2007

	Dow Jones Wilshire	FTSE Global All Cap	MSCI ACWI	Russell Global	S&P/Citigroup BMI
Countries	59	48	48	63	52
Global Companies	12,449 (6,500 exUS)	8,092	2,742	10,000 (7,000 exUS	10,248
U.S. Companies	5,949	2,454	621	3,000	3,322
U.S. weight		44.3%	43.9%		43.0%
Cap sectors	Large/Mid/Small			Large/Small	
Target for inclusion	99% of investable universe; aligns with Dow Jones Wilshire 5000; countries as building blocks	98% of free float-adjusted market cap of each market	85% of free float-adjusted market cap of each market	98% of free float-adjusted market cap of each market; aligns with Russell 3000; stocks as building blocks	All companies with free-float market caps over $100M and at least $25M traded over past 12 months

Source: Steven Shoenfeld, Northern Trust. 16 May 2007